



INSTRUCTIONS

SP-20

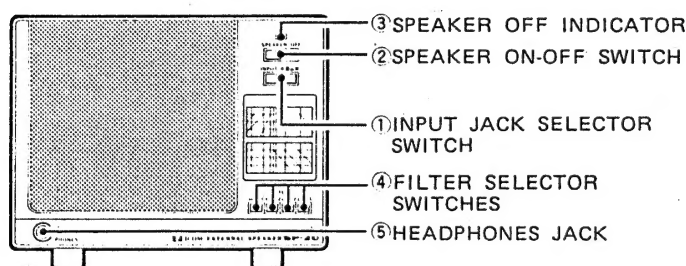
EXTERNAL SPEAKER WITH AUDIO FILTERS

INTRODUCTION

The SP-20 EXTERNAL SPEAKER is designed for use with a wide variety of communication equipment, especially base station systems. The SP-20 is equipped with four separate audio network filters for maximum control of the audio characteristics of receive signals.

CONTROL FUNCTIONS

■ FRONT PANEL



■ FRONT PANEL

- ① **INPUT JACK SELECTOR SWITCH [INPUT A/B]**
This switch selects [INPUT A] or [INPUT B] since the SP-20 can be connected to two transceivers or receivers. [INPUT A]: OUT position. [INPUT B]: IN position.

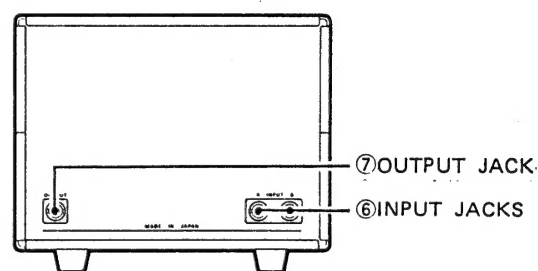
- ② **SPEAKER ON-OFF SWITCH [SPEAKER OFF]**
This switch turns speaker audio output alternately ON and OFF. Audio is emitted when the switch is OUT and no sound is emitted when the switch is IN. Audio signals can be output from the [OUTPUT] JACK on the speaker rear panel regardless of the [SPEAKER OFF] SWITCH position.

NOTE: If no sound is emitted from both the speaker and headphones, make sure the [SPEAKER OFF] SWITCH is in the OUT position.

- ③ **SPEAKER OFF INDICATOR**
This indicator flickers when the [SPEAKER OFF] SWITCH is IN and audio signals are received at the [INPUT A] or [INPUT B] JACK. Indicator sensitivity is set for approx. 100mV. The indicator varies its intensity relative to receive audio level strength.
- ④ **FILTER SEECTOR SWITCHES [FILTERS]**
These switches select internal audio filters that consist of high-pass and low-pass filters with two different cut-off frequency characteristics for each filter. They are useful in producing a customized, personal audio sound.

NOTE: If the [HPF 1] and [HPF 2] SWITCHES are pushed at the same time, [HPF 2] is automatically selected. The same principle applies to [LPF 1] and [LPF 2] (i.e., [LPF 2] is automatically selected).

■ REAR PANEL



[HPF 1] SWITCH

This switch cuts off audio output frequencies of 300Hz or less when the switch is pushed IN.

[HPF 2] SWITCH

This switch cuts off audio output frequencies of 600Hz or less when the switch is pushed IN.

[LPF 1] SWITCH

This switch cuts off audio output frequencies of 2.4kHz or more when the switch is pushed IN.

[LPF 2] SWITCH

This switch cuts off audio output frequencies of 800Hz or more when the switch is pushed IN.

⑤ HEADPHONES JACK [PHONES]

Connect a pair of headphones (impedance 4 ~ 16Ω) to this jack, if required. The built-in speaker does not function when the [PHONES] JACK is being used.

■ REAR PANEL

- ⑥ **AUDIO INPUT JACKS [INPUT A] [INPUT B]**
Audio signals are applied to [INPUT A] or [INPUT B]. Use the supplied speaker cable to make a connection between either jack and the EXTERNAL SPEAKER JACK on your transceiver or receiver. The SP-20 can be connected to two transceivers or receivers using these jacks.

⑦ AUDIO OUTPUT JACK [OUTPUT]

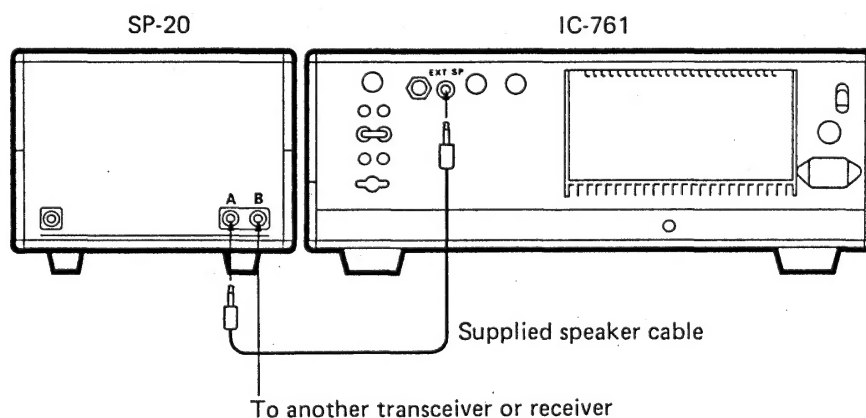
This jack outputs audio signals after they pass through the audio filters specified by the front panel [SPEAKER OFF] SWITCH. This is useful when operating terminal units such as RTTY, SSTV or other digital communications.

SPECIFICATIONS

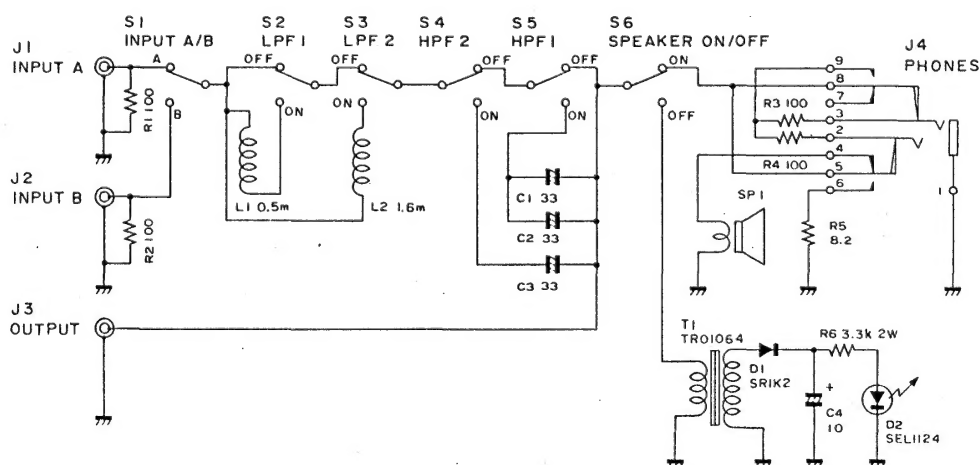
- Speaker : 10cm (4") Cone-type Speaker
- Rated Input Power : 3W
- Maximum Input Power : 5W
- Impedance : 8Ω
- Frequency Response : 100 ~ 9000Hz
- Filter Cut-off Frequencies :
 - HPF 1 300Hz at -3dB point
 - HPF 2 600Hz at -3dB point
 - LPF 1 2.4kHz at -3dB point
 - LPF 2 800Hz at -3dB point
- Filter Response : -6dB/octave
- Dimensions (W x H x D) : 200mm(7-7/8") x 150mm(5-7/8") x 343mm(13-3/8")
Projections not included
- Weight : 2.85kg (6.3lbs.)

* Specifications of equipment are subject to change without notice.

CONNECTIONS



SCHEMATIC DIAGRAM



* To upgrade quality, some components may be subject to change without notice.

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